

What is claimed is:

1. A liquid crystal display device including a liquid crystal display panel provided with thin film transistors driven with control signals and a driving voltage applied from a host system, said device comprising:

5 a timing controller having an input terminal for receiving the control signals transmitted from the host system and having an output terminal;

 a frequency detector connected to any one of the input terminal or the output terminal of the timing controller to detect the transmitted control signals;

10 compensation voltage setting means for compensating the driving voltage in response to the control signals detected by the frequency detector so as to adjust a charge time of the thin film transistors; and

 a digital to digital converter for generating a compensation voltage set by the compensation voltage setting means to deliver the compensation voltage to the liquid crystal display panel.

15 2. The liquid crystal display device as claimed in claim 1, wherein said compensation voltage is any one of a gate high voltage and a common voltage of the thin film transistors.

20 3. The liquid crystal display device as claimed in claim 1, wherein said compensation voltage includes a gate high voltage and a common voltage of the thin film transistor.

25 4. A method of controlling a liquid crystal display device including a liquid crystal display panel provided with thin film transistors driven with control signals and a driving voltage applied from a host system, said method comprising:

 detecting the control signals from any one of an input terminal and an output terminal of a timing controller receiving the control signals from the host system;

 setting a compensation voltage for compensating the driving voltage in response to the detected control signals so as to adjust a charge time of the thin film transistors; and

 generating the set compensation voltage to deliver it to the liquid crystal display panel.

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 5. The method as claimed in claim 4, wherein said compensation voltage is any one

of a gate high voltage and a common voltage of the thin film transistor.

6. The method as claimed in claim 4, wherein said compensation voltage includes a gate high voltage and a common voltage of the thin film transistor.

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7. A liquid crystal display (LCD) device, comprising:

an LCD panel including,

a plurality of pixels arranged in a matrix, each pixel having a corresponding switching device,

10 a plurality of data lines connected to the switching devices for providing pixel data thereto, and

a plurality of scanning lines for applying scanning signals to control the switching devices;

a timing controller receiving external control signals and controlling a timing of scanning signals;

a frequency detector detecting a frequency of at least one of the external control signals;

a voltage compensator receiving the detected frequency and generating therefrom a compensation voltage control signal; and

20 a voltage converter receiving the compensation voltage control signal and a reference voltage for driving the scanning lines of the LCD panel and in response thereto generating a compensated driving voltage for driving the scanning lines of the LCD panel.

8. The LCD device of claim 7, wherein the compensated driving voltage includes a
25 high voltage level of the scanning signals.

9. The LCD device of claim 7, wherein the compensated driving voltage includes a common voltage level of the scanning lines.

30 10. The LCD device of claim 7, wherein the compensated driving voltage includes a high voltage level and a common voltage level of the scanning lines.

11. The LCD device of claim 7, wherein the frequency detector directly detects the frequency of the external control signals applied to the timing controller.
12. The LCD device of claim 7, wherein the frequency detector detects a frequency of the control signals by detecting a corresponding frequency of an output signal of the timing controller.
13. A method of driving a liquid crystal display device comprising an LCD panel including a plurality of pixels arranged in a matrix, each pixel having a corresponding switching device, a plurality of data lines connected to the switching devices for providing pixel data thereto and a plurality of scanning lines for applying scanning signals to control the switching devices, the method comprising:
receiving external control signals for controlling a timing of scanning signals;
detecting a frequency of at least one of the external control signals;
generating a compensation voltage control signal according to the detected frequency;
and
employing the compensation voltage control signal to generate a compensated driving voltage for driving the scanning lines of the LCD panel.
14. The method of claim 13, wherein the compensated driving voltage includes a high voltage level of the scanning signals.
15. The method of claim 13, wherein the compensated driving voltage includes a common voltage level of the scanning lines.
16. The method of claim 13, wherein the compensated driving voltage includes a high voltage level and a common voltage level of the scanning lines.
17. The method of claim 13, wherein employing the compensation voltage control signal to generate a compensated driving voltage for driving the scanning lines of the LCD panel comprises one of raising or lowering a high voltage level of the scanning signals.

18. The method of claim 13, wherein employing the compensation voltage control signal to generate a compensated driving voltage for driving the scanning lines of the LCD panel comprises one of raising or lowering a common voltage level of the scanning signals.

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19. The method of claim 13, wherein employing the compensation voltage control signal to generate a compensated driving voltage for driving the scanning lines of the LCD panel comprises:

one of raising or lowering a high voltage level of the scanning signals; and

10 one of raising or lowering a common voltage level of the scanning signals.

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